Colorectal Cancer

Definition: Cancer of the colon and rectum, collectively known as colorectal cancer, is characterized by uncontrolled growth of neoplastic cells developing in the lower segment of the digestive tract, with the potential to invade and spread to other sites. ICD-9 codes 153-154 (see Technical Note).

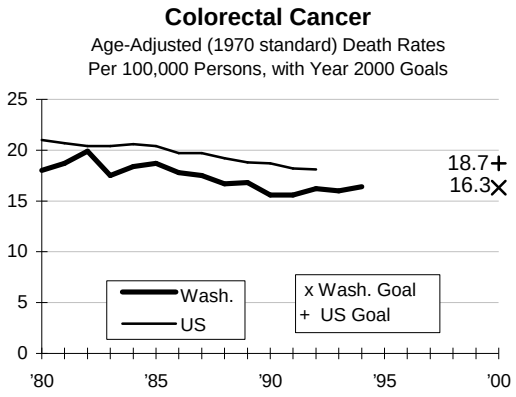
Summary

In 1994, colorectal cancer accounted for 1007 deaths in Washington residents (age-adjusted death rate 16.4 per 100,000). It is the fourth most common cancer in Washington and the second leading cause of cancer death (after lung cancer) in both Washington and the United States. An estimated 7% of Americans will develop colorectal cancer in their lifetime.

Many colorectal cancer deaths are preventable. Regular exercise and a low-fat diet with 5 or more servings of fruit and vegetables a day may reduce an individuals likelihood of developing this disease. Routine screening beginning at age 50 is beneficial; when the disease is detected and treated early the cure rate for colorectal cancer can exceed 80%.

Time Trends

Both Washington and US colorectal cancer death rates decreased from 1980 through 1992. This may reflect earlier detection and improvements in diagnostic tests and techniques, as well as improved treatment practices. The 1992 US mortality rate for colorectal cancer was 18.1 per 100,000 people, compared to a Washington rate of 16.2.

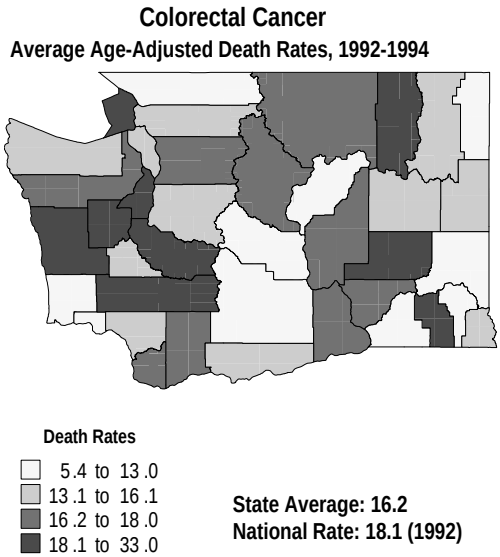


Year 2000 Goal

Washington's goal for the year 2000 is to reduce the annual age-adjusted colorectal cancer deaths to no more than 16.3 per 100,000 people. The mortality rate in Washington for 1994 was 16.4 per 100,000. While the original goal has been essentially met, maintaining and improving this death rate will be possible only with continued emphasis on effective prevention and early detection.

Geographic Variation

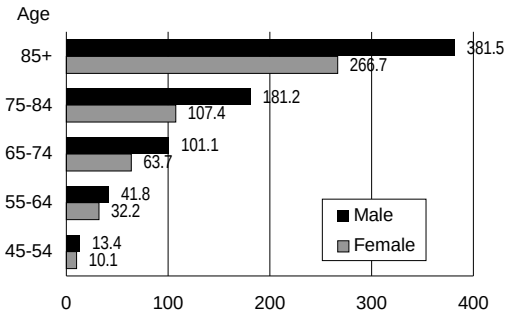
Age-adjusted death rates in Washington counties for 1992-1994 varied from a high of 33.0 per 100,000 to a low of 5.4, with the state average being 16.2 For many counties the rates are based on very small numbers and are subject to considerable year-to-year fluctuation. People interested in assessing colorectal cancer at the local level, and comparing the experience of various areas of the state, would be well advised to examine several years of colorectal cancer deaths.



Age and Gender

Colorectal cancer is rarely seen in people under age 40. Mortality rises sharply after age 50, increasing steadily with age. Colorectal cancer develops more commonly in men, and mortality rates for men are consistently higher than for women.

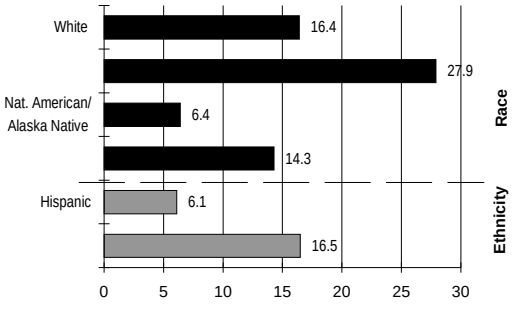
Colorectal Cancer
by Age and Gender
Age-Specific Deaths per 100,000, Wash. State, 1994



Race and Ethnicity

Colorectal cancer mortality in Washington is highest among African Americans. Nationally, 1992 colorectal cancer mortality rates among Caucasians were 10.5/100,000 for women and 15.7/100,000 for men. The mortality rates for African Americans were 14.8/100,000 for women and 20.8/100,000 for men.

Colorectal Cancer
by Race and Ethnicity
Age-Adjusted (1970 standard) Deaths per 100,000,
Wash. State, 1994



Other Measures of Impact and Burden

Incidence. Deaths attributed to colorectal cancer appear to have declined, and after many years of gradual increase, national colorectal cancer incidence rates have been declining. The age-adjusted incidence rate in Washington state for 1993 was 40.7/100,000. The national age-adjusted incidence rate for 1986-1991 was 48.6.[1]

Hospitalization. In 1994, 2,237 hospital admissions were recorded among Washington residents for colorectal cancer related diagnosis or treatment, an admission rate of 42 per 100,000. This represents a decline from the rate of 47/100,000 in 1990, reflecting a trend toward outpatient management of cancer cases.

Years of Potential Life Lost. On average, individuals diagnosed with colorectal cancer are deprived of 6 to 7 years of expected life.

Quality of Life. When diagnosed at an early stage, this malignancy is highly curable by surgical treatment. Unfortunately, this is not the case for most patients. In 1993, only 33% of colorectal cancers in Washington state residents were diagnosed at an early stage. Symptoms of advanced disease can include pain, bowel obstruction, bleeding and weakness. Medical treatment for advanced disease involves intensive therapies such as surgical resection, colostomies, chemotherapy, and radiation therapy which can be very uncomfortable and disabling.

Risk and Protective Factors

Nutrition. Increasingly, studies suggest an elevated risk of developing colorectal cancer in people with a diet high in fat and low in fiber. Research continues to clarify the role of dietary fat and fiber in the development of colorectal cancer. A diet rich in fruits and vegetables has been shown to significantly decrease the risk of colorectal cancer in both men and women.[2]

Physical activity. Several studies have shown that a sedentary lifestyle is associated with an increased risk of colorectal cancer.[3]

Hereditary conditions and family history. Familial polyposis and non-polyposis syndromes are examples of inherited conditions that can lead to development of colorectal cancer. People with a family history of colorectal cancer may also have a higher risk for developing the disease.

Pre-existing disease. Patients with a history of a previous colorectal, breast, ovarian or endometrial cancer, and those with inflammatory bowel disease, are at greater risk for developing colorectal cancer.

Screening and Stage at Diagnosis. A high percentage of early cancers can be detected by regular screening of asymptomatic individuals over age fifty. The results of two large screening programs have demonstrated efficacy in reducing colorectal cancer mortality. Both studies suggest that individuals receiving periodic sigmoidoscopy (visual examination of the lower bowel through a lighted tube) have less advanced disease and better survival from colorectal cancer than the general population.[4] Regular screening of the stool for invisible quantities of blood (fecal occult blood testing) also may reduce mortality.[5]

The estimated 10 year survival rate for local disease (disease confined to the colon or rectum) is 74%. For regional disease (disease that has spread outside the colon or rectum but is still confined to the pelvis) the percent surviving 10 years after diagnosis drops to 36%. Persons diagnosed with metastatic colorectal cancer (disease that has spread to other organs such as the liver or brain) have only a 5% survival rate at 10 years.

High Risk Groups

Any group of people in whom the major risk factors are concentrated will tend to have higher colorectal cancer rates than the general public.

The Elderly. Ninety-four percent of colorectal cases develop in people over age fifty.

Individuals with hereditary conditions, personal history of certain cancers, and family history of colorectal cancer. Twenty-three percent of all colorectal cancers occur in this high risk group.

Lifestyle choices. People who make unhealthy choices regarding dietary intake and physical activity have increased risk for this disease.

Intervention Points, Strategies and Effectiveness

A number of studies suggest that a diet low in fat and high in fiber may help to prevent colorectal cancer. The American Cancer Society and the National Cancer Institute recommend that persons over age 50 receive flexible sigmoidoscopy every three to five years. Also, regular physical activity has shown an association with reduced rates of colorectal cancer. Public health strategies that address lifestyle choices in the general population and in specific high risk populations may help to decrease the risk of developing colorectal cancer. Strategies to promote physical activity and to increase fruit and vegetable consumption are addressed elsewhere in this document. (See section on Nutrition.)

Despite increasing evidence of screening efficacy, little is known regarding effective public health strategies to increase screening for the disease on a population basis. National organizations have not yet launched major public health initiatives for population-based strategies to prevent colorectal cancer. Further work is needed in this area.

See related sections on All Cancer, Nutrition and Physical Inactivity.

Data Sources

State Death Data: Washington Department of Health, Center for Health Statistics.

National Death Data: National Center for Health Statistics and SEER Cancer Statistics Review.

State Hospitalization Data: Comprehensive Hospital Abstract Reporting System (CHARS).

State Cancer Incidence Data: Washington Department of Health, Washington State Cancer Registry.

For More Information

Washington State Department of Health, Office of Non-infectious Disease and Injury Prevention.

(360) 586-6082.

Potter J.D., Slattery M.L., Bosticle R.M., Gapstur S.M. Colon Cancer. A review of the Epidemiology. Epidemiologic Review. 15(2): 499-544.

Technical Notes

ICD-9 codes: In *Healthy People 2000*, colorectal cancer is defined as ICD-9 153-154 and 159.0, and the national goal reflects this coding. The definition of colorectal cancer in this publication excludes ICD 159.0, which is cancers of the intestinal tract, part unspecified. Since there are very few cancer deaths coded to 159.0 in Washington (13 out of 1,021 in 1993), this coding difference does not significantly affect interpretation of the data.

Age adjustment: Rates presented in this section are age-adjusted to the 1970 US standard population. The Washington State total population colorectal cancer rate for 1994, age-adjusted to the 1940 US population, was 11.9/100,000. See technical appendix.

Race and ethnicity: See technical appendix.

Endnotes:

[1] North American Association of Central Cancer Registries. Cancer Incidence in North America. 1994

[2] Thun MJ., Calle EE, Namboodiri MM, et al. Risk factors for fatal colon cancer in a large prospective study. J Natl Cancer Inst. 84 (19) : 1491-1500. 1992.

[3] Whittemore AS, Wu-Williams AH, Lee M, et al. Diet, physical activity, and colorectal cancer among Chinese in North America and China. J Natl Cancer Inst. 82(11):915-26. 1990.

[4] Selby JV, Friedman GD, Quesenberry CP, et al. A case- control study of screening sigmoidoscopy and mortality from colorectal cancer. New Eng J Med. 326 (10) : 653-7. 1992.

[5] Mandel JS, Bond JH, Church TR, Snover DC, et al. Reducing mortality from colorectal cancer by screening for fecal occult blood. New Eng J Med. 328(19):1365-71. 1993.